

Name _____ Period _____ Group _____

Warm-up 82

SHOW ALL WORK

Date _____ Score _____

Write the following equation in point-slope form for the line with the given slope through the given point:

- Slope = 2; (1, 3)
- Slope = -5; (-6, 4)
- Which lines are parallel? $y = 4x + 5$; $y = -\frac{1}{4}x - 5$; $y = 4x - 2$; $y = -\frac{1}{4}x + 1$
- Tell whether the given ordered pairs satisfy a linear equation. Explain.

x	-3	0	3	6	9
y	-2	-1	0	2	4

- Tell whether the given ordered pairs satisfy a linear equation. Explain.
 $\{(0,5), (-2,3), (-4,1), (-6,-1), (-8,-3)\}$

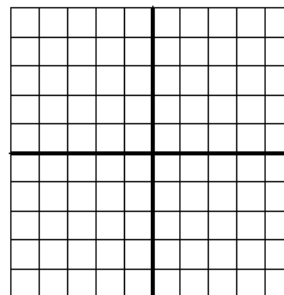
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Warm-up 83

SHOW ALL WORK

Date _____ Score _____

- Sketch a graph that could represent the following situation: A person walks, leisurely, stops, and then continues walking
- Sketch a graph that could represent the following situation: A person jogs, then runs, and then jogs again.



- Graph a scatter plot of the given data:

Age (yr)	1	2	3	4	5	14
Sleep Needed (h)	14	13	12	12	11	9

- Describe the correlation illustrated by the scatter plot.
- Predict how many hours of sleep a 16-year-old needs.

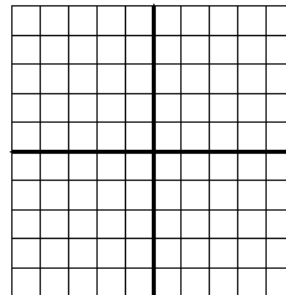
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Warm-up 84

SHOW ALL WORK

Date _____ Score _____

1. Write an inequality for the following situation: Madison must run a mile in no more than 9 minutes to qualify for the race.



Describe the solutions of each inequality in words.

2. $-6 \leq m$

3. $3t > 12$

4. $2 + b \leq 10$

5. Graph the following inequality: $2.5 < c$

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Warm-up 85

SHOW ALL WORK

Date _____ Score _____

1. Write two verbal expressions for $n - 5$.

Simplify the following expressions:

2. 5^4

3. -6^2

4. Evaluate the following expression for the given value of x:

$$\frac{-2-6}{x^2} \text{ for } x = 2$$

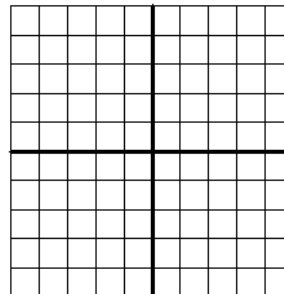
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Warm-up 86

SHOW ALL WORK

Date _____ Score _____

- Does the phrase "2 times the sum of a number and 5" represent the same expression as the phrase "the sum of 2 times a number and 5"? Explain why or why not.
- Solve: $\frac{5}{4} = \frac{x}{12}$
- A lunch check is \$27.95. Estimate a 15% tip.
- Determine if the following sequence is an arithmetic sequence. If so, find the common difference and the next three terms: 11, 6, 1, -4, ...
- Write the equation $2x - 2y = 4$ in slope-intercept form, and then graph.



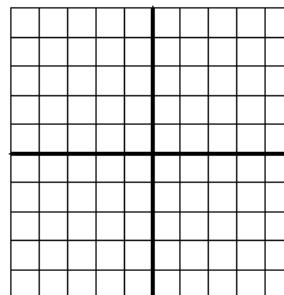
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Warm-up 87

SHOW ALL WORK

Date _____ Score _____

- Graph $f(x)$ and $g(x)$. Then describe the transformation(s) from the graph of $f(x)$ to the graph of $g(x)$.
a. $f(x) = 8x$ and $g(x) = 4x$
- Which lines are perpendicular: $y - 2 = 3x$; $y = \frac{1}{2}x + 1$; $y = 2x$; $x + 2y = 4$.
- Nate runs 8 miles each week. Write an expression for the number of miles he runs in n weeks. Find the number of miles Nate runs in 5 weeks.
- Bowling costs \$3 per game plus \$2.50 for shoe rental. Identify the independent and dependent variables. Write a rule in function notation for the situation.
- Solve the following inequality: $2k - 6 > 3k + 2$



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Warm-up 88

SHOW ALL WORK

Date _____ Score _____

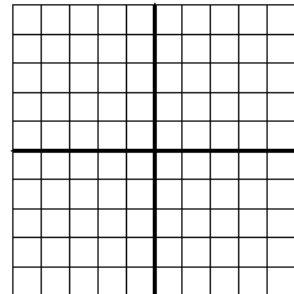
1. Give the domain and range of the table to the right. Tell whether the relation is a function. Explain.

x	-2	1	0	1	3
y	3	2	1	0	-1

2. Find the simple interest earned after 5 years on an investment of \$2000 at 3.2%.

3. What is 23% of 46?

4. The driving school instructor has asked Lina to stay within 2 miles of the posted speed limits. The current road has a speed limit of 45 mi/h. Write a compound inequality to show Lina's acceptable speed s .



5. Graph: $y = x - 5$

Name _____ Period _____ Group _____

Warm-up 89

SHOW ALL WORK

Date _____ Score _____

1. Tell whether the given ordered pairs satisfy a linear function. Explain. $\{(0,0),(1,1),(2,4),(3,9),(4,16)\}$

2. Use intercepts to graph the line described by $2x - 3y = 6$.

3. Give the domain and range of the following relation. Tell whether the relation is a function. Explain. $\{(-5,-3),(-3,-2),(-1,-1),(1,0)\}$

4. Solve: $3x + 4 < 19$

5. Solve: $6 - 0.2n < 9$

Name _____ Period _____ Group _____

Warm-up 90

SHOW ALL WORK

Date _____ Score _____

Solve each equation. Check your solution.

1. $b - 16 = 20$

2. $9 + a = -12$

3. $4 + x = 2$

4. $35 = 5x$

5. $-30 = \frac{n}{3}$

Name _____ Period _____ Group _____

Warm-up 91

SHOW ALL WORK

Date _____ Score _____

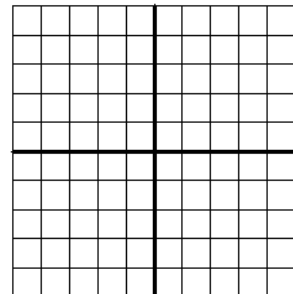
1. Solve: $4x + 2 = 3x$

2. Solve: $0.2(7 + 2t) = 0.4t + 1.4$

3. Find the indicated term of the following arithmetic sequence: 31st term; -15, -11, -7, -3, ...

4. Graph the following function for the domain $\{-2, -1, 1, 2\}$: $4x + y = 2$.

5. For $f(x) = -2x + 4$, find $f(x)$ when $x = -5$.



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Warm-up 92

SHOW ALL WORK

Date _____ Score _____

1. Find the slope of the line described by the following equation: $4x + 3y = 24$.
2. Find the slope of the line that contains the following pair of points: (1,2) and (2, -3).
3. Write the following equation in standard form and give the values of A , B , and C :
 $y = -5x + 1$.
4. Is (1, -4) a solution to the following system of equations? $\begin{cases} y = -4x \\ y = 2x - 2 \end{cases}$.
5. Is (0, 1) a solution to the following system of equations? $\begin{cases} 3x - y = 1 \\ x + 5y = -5 \end{cases}$.

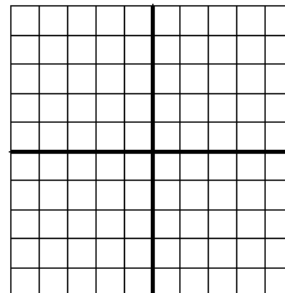
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Warm-up 93

SHOW ALL WORK

Date _____ Score _____

1. Solve the following system by graphing. $\begin{cases} y = x - 3 \\ y = -2x - 3 \end{cases}$
2. Show that ABC is a right triangle, given A(-3,2); B(5,5); and C(0,-6).
3. Write the following equation in standard form and give the values for A , B , and C . $\frac{x+2}{2} = -3y$
4. Simplify. $5^3 \cdot 5^6$
5. Find the slope of the following equation. $-5y + 85 = -2x$



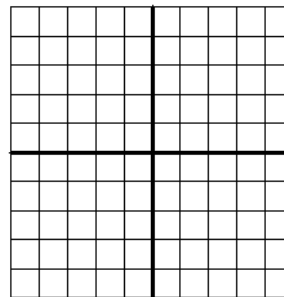
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Warm-up 94

SHOW ALL WORK

Date _____ Score _____

1. What is the slope of a line perpendicular to a line that passes through (3,8) and (1,-4)?
2. Identify the independent and dependent variables: A baker spends \$6 on ingredients for each cake he bakes.
3. Graph the following function. $y = |x + 5| + 1$
4. What is the domain and range of the function above in number 3?
5. Solve the following system of equations by elimination.
$$\begin{cases} 3x - y = 7 \\ 2x + y = 3 \end{cases}$$



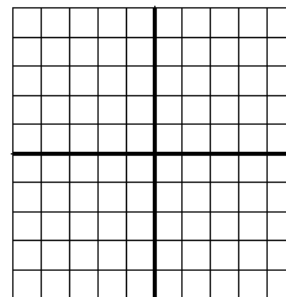
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Warm-up 95

SHOW ALL WORK

Date _____ Score _____

1. Solve the following system by substitution.
$$\begin{cases} y = -6 \\ y = -2x - 3 \end{cases}$$
2. Graph the solutions of the following linear inequality.
 $y < 2x - 5$
3. Write an equation that has the same slope as the following equation. $2x - 3y = 3$
4. Describe the solutions of the following inequality in words.
 $4t > 12$
5. Classify the following system. Give the number of solutions.
$$\begin{cases} y = 6x - 1 \\ 6x - y = 1 \end{cases}$$



Name _____ Period _____ Group _____

Warm-up 96

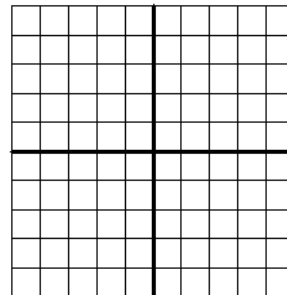
SHOW ALL WORK

Date _____ Score _____

1. Is $(3, 2)$ a solution to the following system?
$$\begin{cases} x - 2y = -1 \\ -3x + 2y = 5 \end{cases}$$

2. Graph the solution to the following linear inequality. $-y \geq 8$

3. An airport parking lot charges an entry fee of \$2 plus \$2.50 for every hour that your car is parked. The total charge for parking x hours is $f(x) = 2.5x + 2$. How will the graph of this function change if the entry fee is increased to \$3.50? If the hourly rate is reduced to \$2.25?



4. Write an equation in slope-intercept form for the line that is parallel to $y = -3x + 4$ and passes through $(6, -2)$.

5. Solve the following system using any method of your choice.
$$\begin{cases} y = \frac{1}{4}x - 3 \\ y = \frac{1}{4}x + 5 \end{cases}$$

Name _____ Period _____ Group _____

Warm-up 97

SHOW ALL WORK

Date _____ Score _____

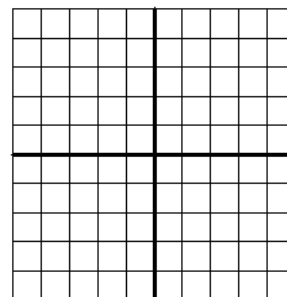
1. Simplify. $(f^4)^3$

2. In 2002, there were approximately 544,000,000 Internet users worldwide. Write this number in scientific notation.

3. Simplify, combining like terms. $3a - 4b + 2a$

4. Multiply. $-5(r^2s - 6)$

5. Ezra and Tava sold at least 150 coupon books. Ezra sold at most 30 books more than twice the number Tava sold. Show and describe all possible combinations of the numbers of coupon books Ezra and Tava sold. List two possible combinations.



Name _____ Period _____ Group _____

Warm-up 98

SHOW ALL WORK

Date _____ Score _____

1. Simplify. $\frac{2^5 \cdot 3^3 \cdot 5^4}{2^8 \cdot 3^2 \cdot 5^4}$
2. The surface area of a cone is approximated by the polynomial $3.14r^2 + 3.14rl$ where r is the radius and l is the slant height. Find the approximate surface area of a cone when $l = 5$ cm and $r = 3$ cm, round to three decimal places.
3. Solve the following system of equations.
$$\begin{cases} y = x + 1 \\ -x + y = 3 \end{cases}$$
4. Write an equation in slope-intercept form for the line that is parallel to $y = 7$ and passes through $(2, 4)$.
5. Give an example of a graph that is not a *scatter plot*.

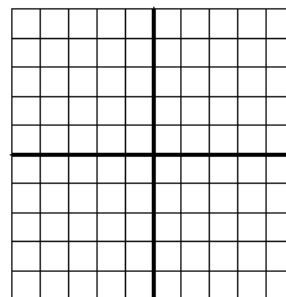
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Warm-up 99

SHOW ALL WORK

Date _____ Score _____

1. Does a *trend line* always pass through every point on a scatter plot? Explain.
2. Give a value for x and a value for y that make the following inequality true. $x + y \leq |x + y|$
3. Simplify. $5 + (x + 3) + 5 + 2(x + 3)$
4. Graph the system of inequalities.
$$\begin{cases} y \leq x + 1 \\ y > 2 \end{cases}$$
5. Simplify. $\frac{y^4}{y}$



Name _____ Period _____ Group _____

Warm-up 100

SHOW ALL WORK

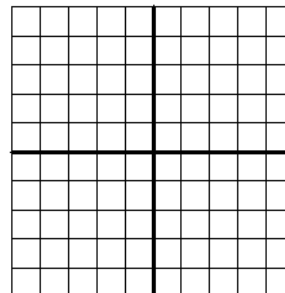
Date _____ Score _____

1. Evaluate the following expression for $b = 12$. $\left(\frac{1}{3}b\right)^{-2}$

2. Write the following number as a power of 10.
0.0000001

3. Tell whether $(0, 1)$ is a solution of the following system.

$$\begin{cases} y < -3x + 2 \\ y \geq x - 1 \end{cases}$$



4. Graph the solution to the following system of inequalities.

$$\begin{cases} 8x + 4y \leq 12 \\ y > \frac{1}{2}x - 2 \end{cases}$$

5. Simplify. $\frac{2}{3}m^2n^{-3}$

Name _____ Period _____ Group _____

Warm-up 101

SHOW ALL WORK

Date _____ Score _____

1. Multiply. $(15xy^2)\left(\frac{1}{3}x^2z^3\right)(y^3z^4)$

2. Multiply (FOIL) the following binomials. $(2x + 7)(3x + 7)$

3. Find the value of the following expression. 650.3×10^6

4. Angelo runs 7 miles per week and increases his distance by 1 mile each week. Marc runs 4 miles per week and increases his distance by 2 miles each week. In how many weeks will Angelo and Marc be running the same distance? What will that distance be?

5. Solve the following system by substitution.
$$\begin{cases} y - 4x = 3 \\ 2x - 3y = 21 \end{cases}$$

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Warm-up 102

SHOW ALL WORK

Date _____ Score _____

1. Solve the following system by elimination. $\begin{cases} x + y = 12 \\ x - y = 2 \end{cases}$

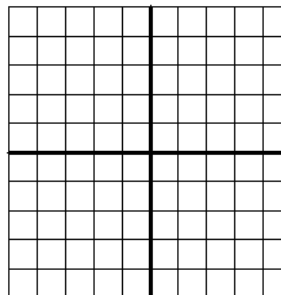
2. Determine a relationship between the x- and y-values.
Write an equation.

x	1	2	3	4
y	6	7	8	9

3. Tell whether $x = 2y$ is a direct variation. If so, identify the constant of variation.

4. Solve the following system by substitution. $\begin{cases} y = x - 1 \\ x + y = 10 \end{cases}$

5. Solve. $18 = \frac{3}{7}x$



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Warm-up 103

SHOW ALL WORK

Date _____ Score _____

1. Solve. $-\frac{x}{5} = 12$

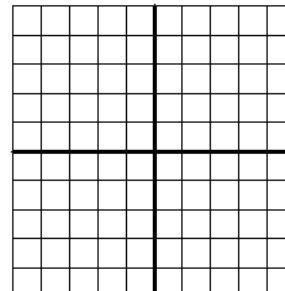
2. Describe the solutions of the following inequality in words.

$$\frac{1}{3}x \geq 9$$

3. Solve the inequality and graph the solutions.
 $4(2x + 1) > 28$

4. Solve by substitution. $\begin{cases} y = 3x \\ y = x - 2 \end{cases}$

5. Find the x- and y-intercepts. $6x - 2y = 12$



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Warm-up 104

SHOW ALL WORK

Date _____ Score _____

1. Simplify. $5(x - y) + 2x + 5y$
2. Find the least common multiple (LCM) of 4 and 10.
3. Solve by substitution.
$$\begin{cases} y = 2x - 1 \\ x - y = 3 \end{cases}$$
4. Explain how you can check your solution to 3 both algebraically and graphically.
5. Is the following sequence arithmetic? If so, find the common difference and the next three terms. 1, 5, 9, 13, ...

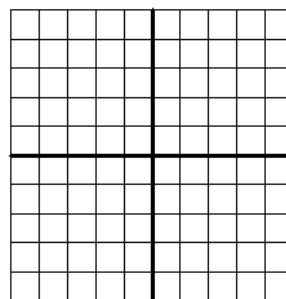
Name _____ Period _____ Group _____

Warm-up 105

SHOW ALL WORK

Date _____ Score _____

1. Solve by graphing.
$$\begin{cases} y = -\frac{1}{2}x \\ y - x = 9 \end{cases}$$
2. Is the following function linear? If so, graph the function. $y = 2x - 4$
3. Write an equation in slope-intercept form for the line through $(-3, 2)$ and $(3, -1)$.
4. Solve by elimination.
$$\begin{cases} x + 6y = 14 \\ x - 6y = -10 \end{cases}$$
5. Solve the following inequality for y. $3x - 2y > 10$



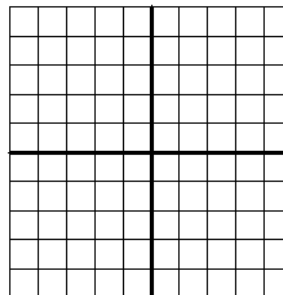
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Warm-up 106

SHOW ALL WORK

Date _____ Score _____

1. Graph the solutions of $4x + 3y > 9$.
2. Write an equation in standard form for the line that passes through $(0, 0)$ and $(-8, -10)$.
3. Is the following function linear? If so, graph the function. $y = x^2 + 2$
4. Tell whether the set of ordered pairs satisfies a linear equation. $\{(3,8),(4,6),(5,4),(6,2),(7,0)\}$
5. What is the area of a square with sides of 5cm?



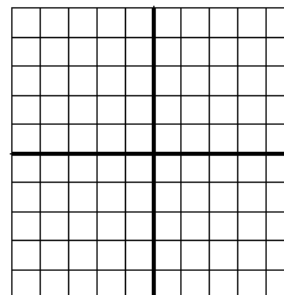
Name _____ Period _____ Group _____

Warm-up 107

SHOW ALL WORK

Date _____ Score _____

1. Graph the following system of linear inequalities and give two pairs that are solutions and two that are not solutions. $\begin{cases} y > -2 \\ y < x + 3 \end{cases}$
2. Describe the solutions to the system of linear inequalities in number 1 above.
3. Is $(-3, -1)$ a solution to the following system? $\begin{cases} y > -2 \\ y < x + 4 \end{cases}$
4. Solve. $6x - 4 = 8$
5. Solve. $2w + 6 - 3w = -10$



Name _____ Period _____ Group _____

Warm-up 108

SHOW ALL WORK

Date _____ Score _____

1. Identify the independent and dependent variable and write a rule in function notation for the following situation: For dog sitting, Beth charges a \$30 flat fee plus \$10 a day.
2. Write the equation in slope-intercept form that describes a line that has a slope of 3 and a y-intercept of -4.
3. Define a variable and write an inequality for the following situation: Melanie must wait at least 45 minutes for the results of her test.
4. Solve by elimination.
$$\begin{cases} x + y = 8 \\ x - y = 2 \end{cases}$$
5. Evaluate t^{-4} for $t = 2$.

Name _____ Period _____ Group _____

Warm-up 109

SHOW ALL WORK

Date _____ Score _____

1. Solve by substitution.
$$\begin{cases} 2x + y = -3 \\ 2x + 3y = -1 \end{cases}$$
2. Evaluate $3a^{-3}b^0$ for $a = 5$ and $b = 6$.
3. Is 50×10^{-5} in scientific notation? If not, rewrite it in scientific notation.
4. Simplify. $(x^2)^5$
5. Simplify if possible. $(2x^2)^2 \cdot (3x^3)^3$

Name _____ Period _____ Group _____

Warm-up 110

SHOW ALL WORK

Date _____ Score _____

1. Write 7.8×10^6 in standard form.
2. Is the following sequence arithmetic? If so, find the common difference and the next three terms. 0.4, 1.0, 1.6, 2.2, ...
3. Simplify. $k^5 \cdot k^{-2} \cdot k^{-3}$
4. Solve. $-2(x-1) + 4x = 5x + 3$
5. Solve the following system.
$$\begin{cases} 3x - 2y = -1 \\ 3x - 4y = 9 \end{cases}$$

Name _____ Period _____ Group _____

Warm-up 111

SHOW ALL WORK

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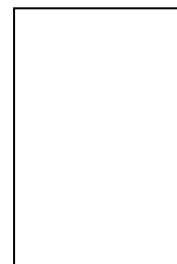
1. Multiply. $9(2x^2 - 5x)$

x

2. Multiply. $x^2y^3 \cdot 5x^2y(6x + y^2)$

x+3

3. The length of the rectangle at right is 3 feet longer than its width.
4. Write a polynomial that represents the area of the rectangle at the right.
5. Find the area of the rectangle at the right when the width is 5 feet.



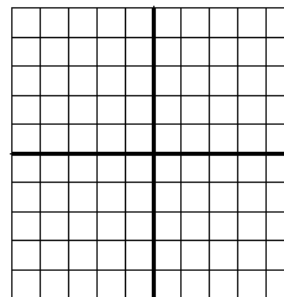
Name _____ Period _____ Group _____

Warm-up 112

SHOW ALL WORK

Date _____ Score _____

1. Multiply. $(x+2)(x-3)$
2. Multiply. $(5x+2)(2x-1)$
3. A stop sign is 2.5 meters tall and casts a shadow that is 3.5 meters long. At the same time, a flagpole casts a shadow that is 28 meters long. How long is the flagpole?
4. Graph the solutions of the following inequality. $y \leq x - 2$
5. Classify the following polynomial according to its degree and number of terms.
 $4m^2 - 12m + 3 + 5m^3$



Name _____ Period _____ Group _____

Warm-up 113

SHOW ALL WORK

Date _____ Score _____

1. Multiply. $(x+7)^2$
2. Multiply. $(2x-1)^2$
3. In your own words, describe a *perfect-square trinomial*.
4. Multiply. $(2x^2+3)(2x^2-3)$
5. The square paper that Yuki is using to make an origami frog has an area of 165 cm^2 . Find the side length of the paper to the nearest centimeter.